

## ABSTRACT

A photoresist-free method for making patterned films of metal oxides, metals, or other metal containing compounds is described. The method involves applying a thin film coating of a metal complex, resulting in the formation of a liquid crystal film. This film can be photolyzed resulting in a chemical reaction which deposits a metal or metal oxide film.. The metal complex used is photoreactive and undergoes a chemical reaction in the presence of light of a suitable wavelength. The end product of the reactions depends upon the atmosphere in which the reactions take place. Metal oxide films may be made in air. Patterned films may be made by exposing only selected portions of the film to light. Patterns of two or more materials may be laid down from the same film by exposing different parts of the film to light in different atmospheres.

15

20

25

30

35